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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,540	12/31/2003	Joel Q. Xue	066243-0240 (141224)	8825

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EXAMINER	
FERNANDEZ, KATHERINE L	
ART UNIT	PAPER NUMBER
3768	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,540	XUE ET AL.	
	Examiner	Art Unit	
	KATHERINE L. FERNANDEZ	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12,13,15-17 and 19-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,13,15-17 and 19-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Objections

1. Claim 16 is objected to because of the following informalities: Claim 16 recites the limitations “the second heart vector” and "the second data set" in line 7. There is insufficient antecedent basis for these limitations in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16-17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: positively recited steps of acquiring the first and second data sets.

4. Claims 20-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what is the role of the processor (i.e. is the processor involved in registering the first heart vector with the second heart vector to generate an image to be displayed?).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 12-13,15,16,17 and 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In addition to inquiry of whether a claimed method fails within a judicial exception, Supreme Court precedent (Diamond v. Diehr, 450 U.S 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780, 787-88 (1876).) and recent Federal Court decisions (*In re Bilski, 88 USPQ2d 1385 (2008)*), require that a claim drawn to a process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. If neither of these requirements is met by the claim, the method is not a patent eligible process under 35 U.S.C. 101 and is improperly directed to nonstatutory subject matter. To qualify as a 101 statutory process, the claim should (1) positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps or (2) positively recite the subject matter that is being transformed. The limitations (i.e. acquiring an image of or pertaining to a heart, acquiring a first data set and a second data set, registering a location, adjusting the size or position of the image, etc.) are non-statutory because they are not tied to another statutory class (such as a particular apparatus), nor do they positively recite subject matter being transformed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 16-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strommer et al. (US Patent No. 7,505,809) in view of Astrom et al. ("Least Squares VCG Loop Alignment") as cited by Applicant.

With regards to claim 16, Strommer et al. disclose a method comprising: acquiring an image of or pertaining to a body part (column 7, lines 33-49; column 17, lines 38-41); determining changes in body position by collecting a first data set and a second data set that relate to the body part's position (column 17, lines 30-34; column 17, lines 49-56); and adjusting the size or position of the image dependent on a change in the location between data in the first and second data sets (i.e. dependent on a change between body positions) (column 18, lines 4-19). Strommer et al.disclose that the first and second data sets are collected using a body position detector (column 17, lines 30-34, 49-56). With regards to claim 17, their method further comprises registering a representation of a probe with an image, the probe being located in or adjacent to a body part (column 7, lines 28-32). With regards to claim 19, the image is correlated to the first data set and the image is adjusted by comparing the first data set to a second data set (column 17, lines 25-48; column 18, lines 4-19; see Figure 6). Although Strommer et al. do not specifically disclose that the body part is a heart, they do disclose that the image is an image of a selected portion of the body of the patient, and since it is well known in the art that the heart may be imaged in order to detect

abnormalities, it would have been within the skill of one of ordinary to select the heart to be imaged.

However, they do not specifically disclose that their method comprises the steps of registering a location of a first heart vector from a first data set relative to a lead system at a skin surface of an imaged subject, wherein the first heart vector represents a summation of electrical currents at a particular time, the summation having a direction and an amplitude; registering a location of the second heart vector from a second data set relative to the lead system and that the image is adjusted dependent on a change in the location between the first and second heart vector generated from the first and second data sets.

Astrom et al. disclose a least-squares error criterion for the alignment of two vectorcardiographic (VCG) loops (see Abstract). They disclose investigating the properties of successive VCG loops in order to detect body position changes (Section: 1. Introduction). They disclose that a VCG loop is related to another "reference" loop but altered by certain geometrical transformation related to body position changes (Sections 1. Introduction and 2. Loop Alignment). By aligning the loops (i.e. registering loops), body position changes can be detected (Sections 1. Introduction and 2. Loop Alignment). The VCG loops are collected using a lead system at a skin surface, and thus the location of the VCG loops (i.e. heart vector represented as a summation of electrical currents at a particular time) are inherently registered to the lead system (Sections 1. Introduction and 2. Loop alignment). They further disclose that their method is intended for use in a detector which finds changes in body position (Section

4. Discussion). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have the step of determining changes in body position and determining a change in body position to adjust the images of Strommer et al. be performed using heart vectors (i.e. registering a location of a first heart vector to a lead system, registering a location of a second heart vector relative to the lead system, adjusting the size/position of the image dependent on a change in the location between the first and second heart vector), as Strommer et al. require the use of a body position detector and Astrom et al. teach that a body position detector can effectively use calculated changes in the location of first and second heart vectors to detect changes in body position (Sections: Abstract, Section 4. Discussion).

Response to Arguments

4. Applicant's arguments with respect to claims 12-13,15-17 and 19-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHERINE L. FERNANDEZ whose telephone number is (571)272-1957. The examiner can normally be reached on 8:30-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3768